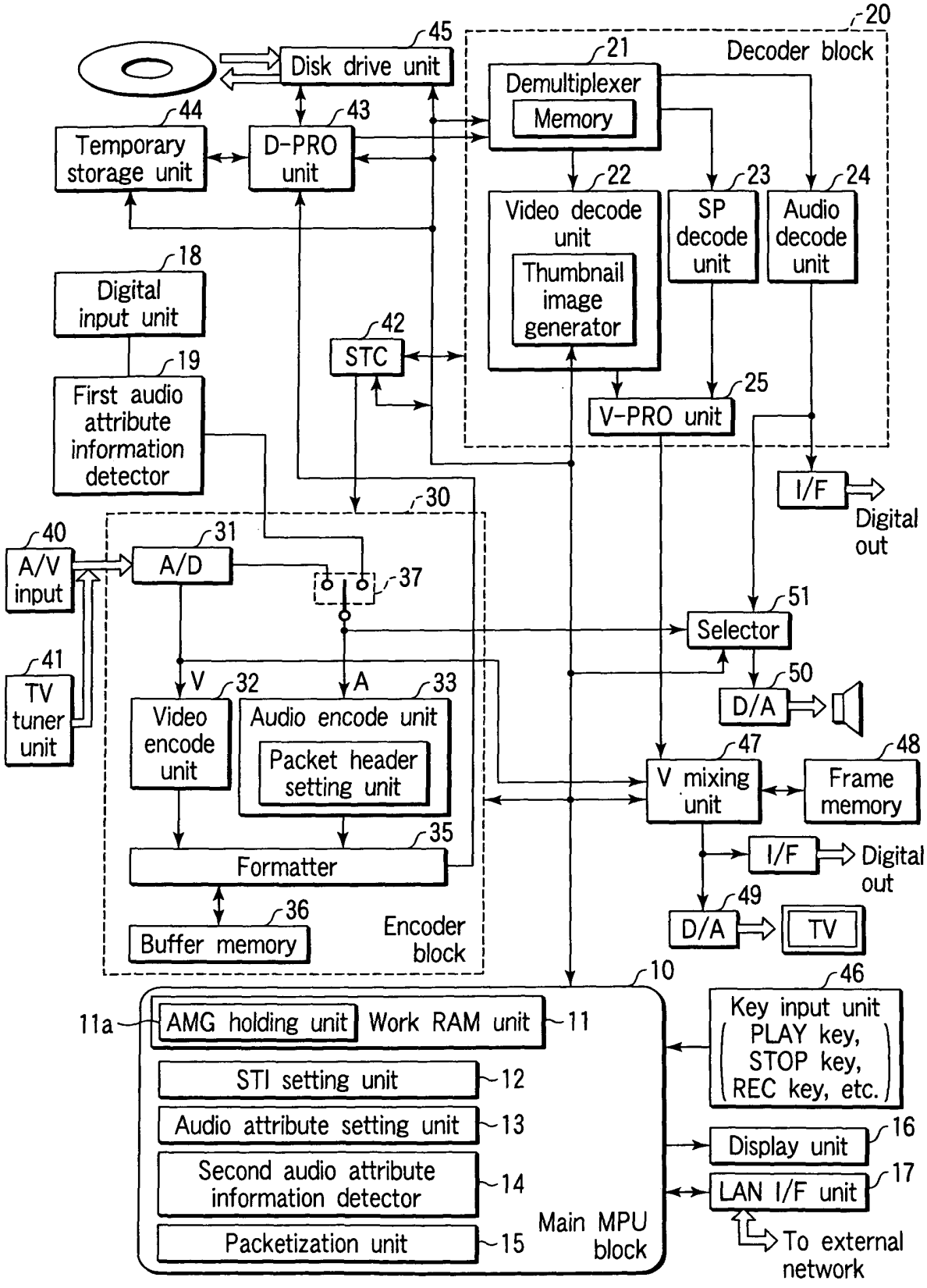
20
Decoder block
45
Disk drive unit
21
Demultiplexer
Memory
44
Temporary storage unit
43
D-PRO unit
22
Video decode unit
Thumbnail image generator
23
SP decode unit
24
Audio decode unit
18
Digital input unit
42
STC
19
First audio attribute information detector
25
V-PRO unit
I/F
Digital out
30
40
A/V input
31
A/D
37
51
Selector
41
TV tuner unit
V
32
Video encode unit
A
33
Audio encode unit
Packet header setting unit
50
D/A
47
V mixing unit
48
Frame memory
35
Formatter
I/F
Digital out
36
Buffer memory
Encoder block
49
D/A
TV
10
46
11a
AMG holding unit
Work RAM unit
11
Key input unit
PLAY key,
STOP key,
REC key, etc.
STI setting unit
12
Audio attribute setting unit
13
16
Display unit
Second audio attribute information detector
14
17
LAN I/F unit
Main MPU block
Packetization unit
15
To external network

FIG. 1

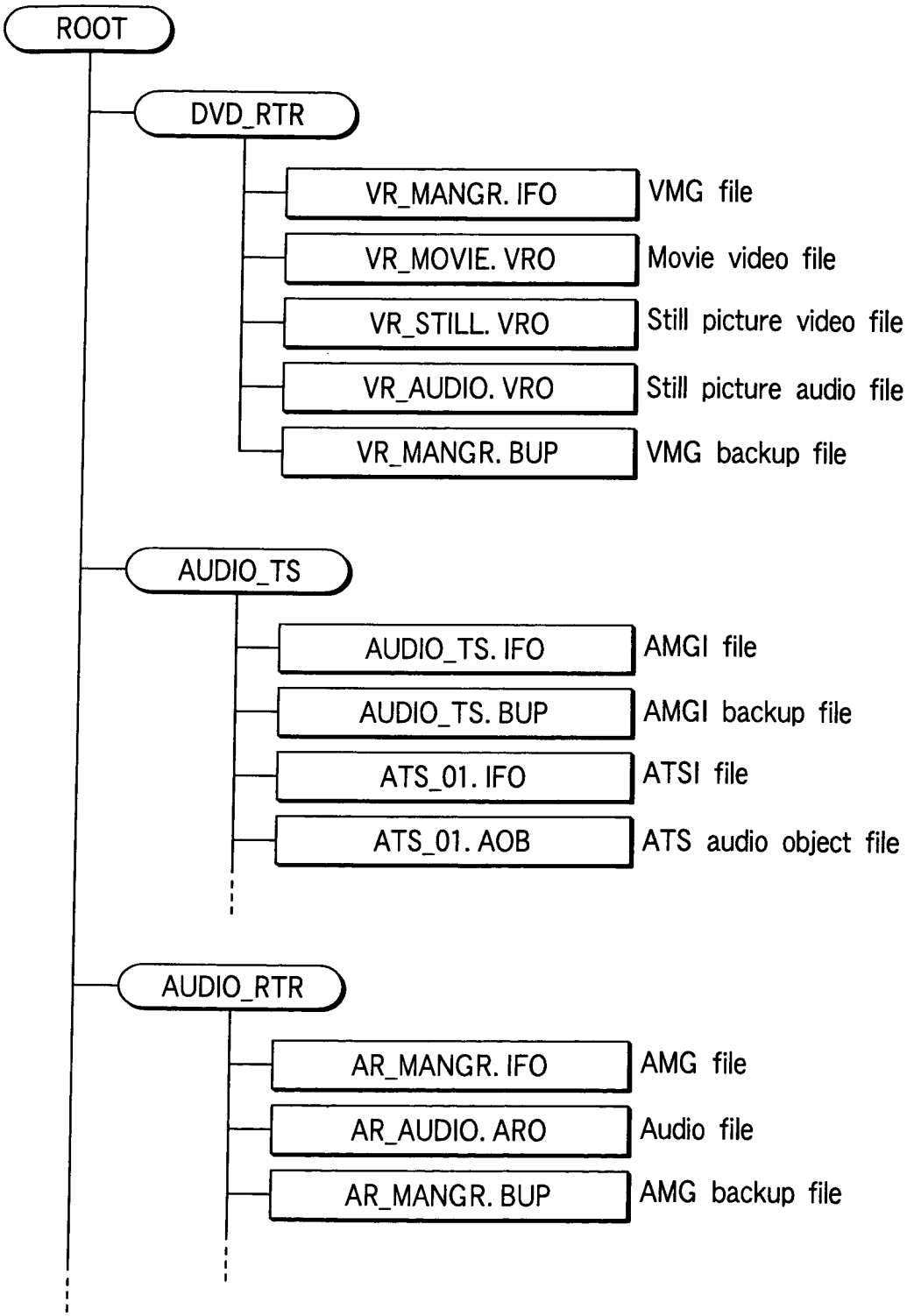
ROOT
DVD_RTR
VR_MANGR. IFO
VMG file
VR_MOVIE. VRO
Movie video file
VR_STILL. VRO
Still picture video file
VR_AUDIO. VRO
Still picture audio file
VR_MANGR. BUP
VMG backup file
AUDIO_TS
AUDIO_TS. IFO
AMGI file
AUDIO_TS. BUP
AMGI backup file
ATS_01. IFO
ATSI file
ATS_01. AOB
ATS audio object file
AUDIO_RTR
AR_MANGR. IFO
AMG file
AR_AUDIO. ARO
Audio file
AR_MANGR. BUP
AMG backup file

FIG. 2

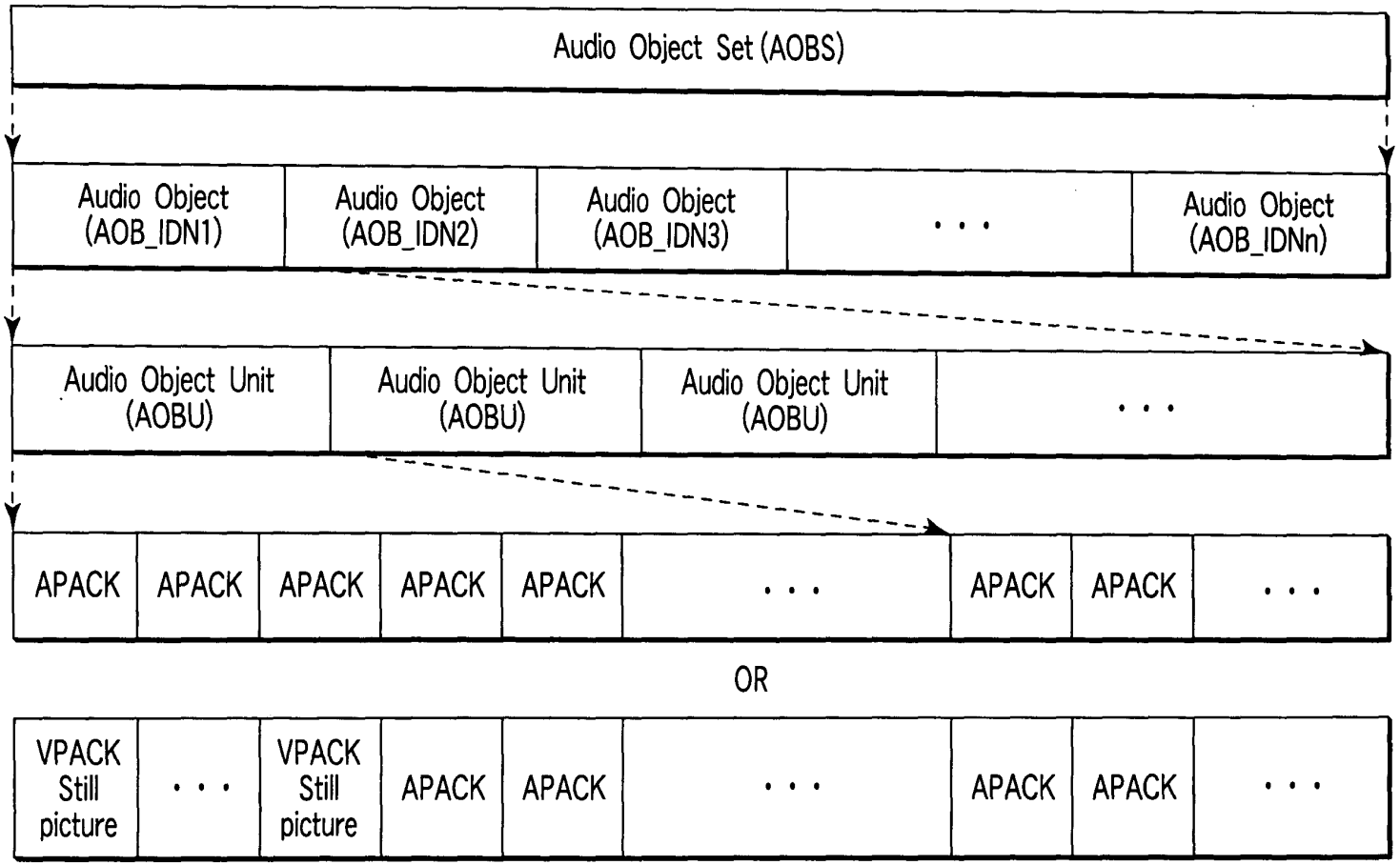
Audio Object Set (AOBS)
Audio Object (AOB_IDN1)
Audio Object (AOB_IDN2)
Audio Object (AOB_IDN3)
Audio Object (AOB_IDNn)
Audio Object Unit (AOBU)
Audio Object Unit (AOBU)
Audio Object Unit (AOBU)
APACK
VPACK Still picture
OR

FIG. 3

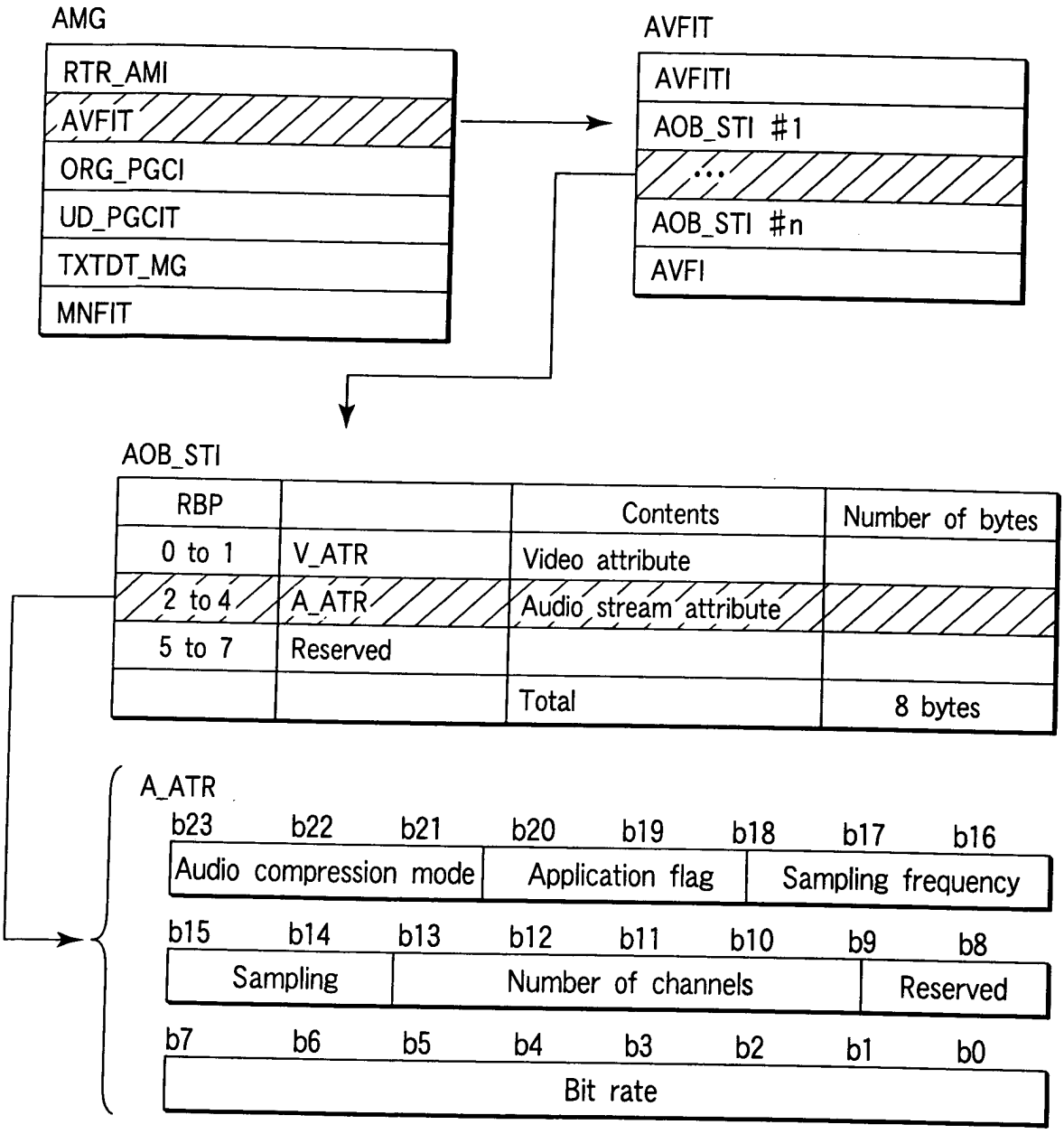
AMG
RTR_AMI
AVFIT
ORG_PGCI
UD_PGCIT
TXTDT_MG
MNFIT
AVFIT
AVFITI
AOB_STI #1
...
AOB_STI #n
AVFI
AOB_STI
RBP
Contents
Number of bytes
0 to 1
V_ATR
Video attribute
2 to 4
A_ATR
Audio stream attribute
5 to 7
Reserved
Total
8 bytes
A_ATR
b23 b22 b21 b20 b19 b18 b17 b16
Audio compression mode
Application flag
Sampling frequency
b15 b14 b13 b12 b11 b10 b9 b8
Sampling
Number of channels
Reserved
b7 b6 b5 b4 b3 b2 b1 b0
Bit rate

FIG. 4

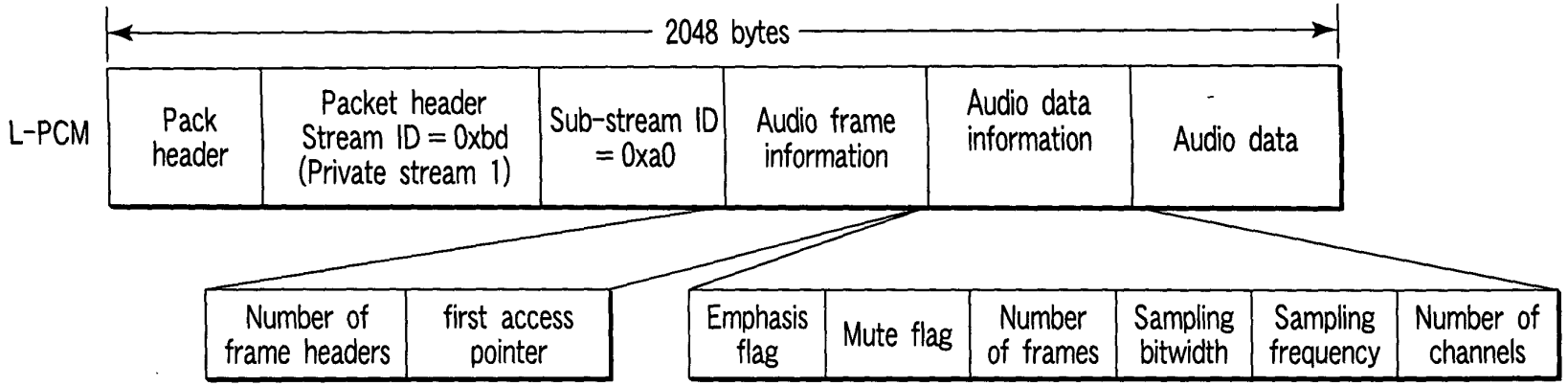
2048 bytes
L-PCM
Pack header
Packet header Stream ID = 0xbd (Private stream 1)
Sub-stream ID = 0xa0
Audio frame information
Audio data information
Audio data
Number of frame headers
first access pointer
Emphasis flag
Mute flag
Number of frames
Sampling bitwidth
Sampling frequency
Number of channels

FIG. 5

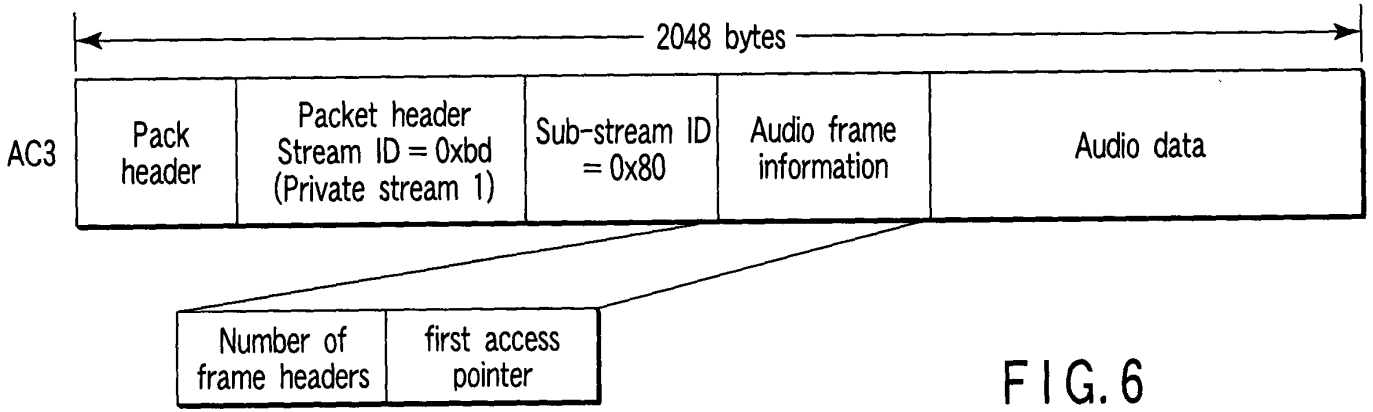
2048 bytes
AC3
Pack header
Packet header Stream ID = 0xbd (Private stream 1)
Sub-stream ID = 0x80
Audio frame information
Audio data
Number of frame headers
first access pointer

FIG. 6

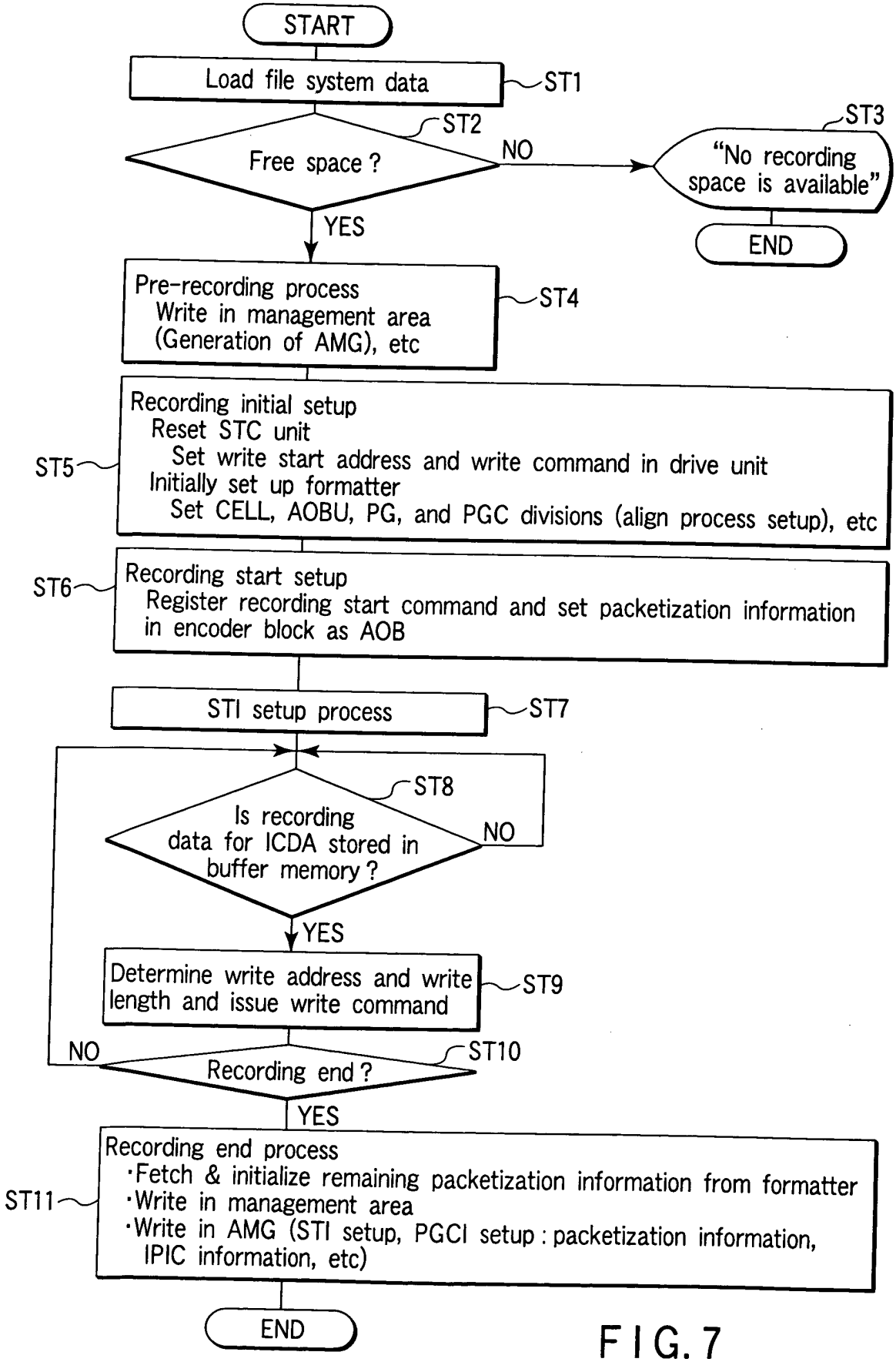
START
Load file system data
ST1
ST2
Free space ?
NO
ST3
"No recording space is available"
END
YES
Pre-recording process
Write in management area
(Generation of AMG), etc
ST4
Recording initial setup
Reset STC unit
Set write start address and write command in drive unit
Initially set up formatter
Set CELL, AOBU, PG, and PGC divisions (align process setup), etc
ST5
Recording start setup
Register recording start command and set packetization information in encoder block as AOB
ST6
STI setup process
ST7
ST8
Is recording data for ICDA stored in buffer memory ?
NO
YES
Determine write address and write length and issue write command
ST9
NO
Recording end ?
ST10
YES
Recording end process
·Fetch & initialize remaining packetization information from formatter
·Write in management area
·Write in AMG (STI setup, PGCI setup : packetization information, IPIC information, etc)
ST11
END

FIG. 7

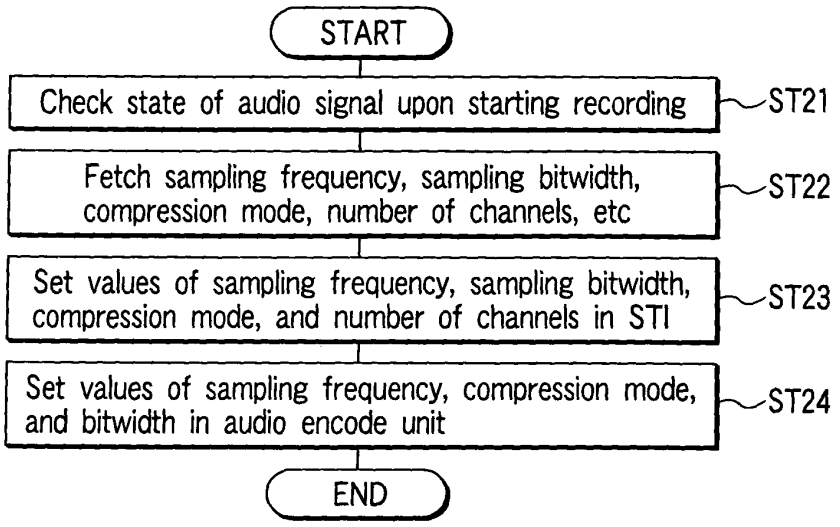

FIG. 8

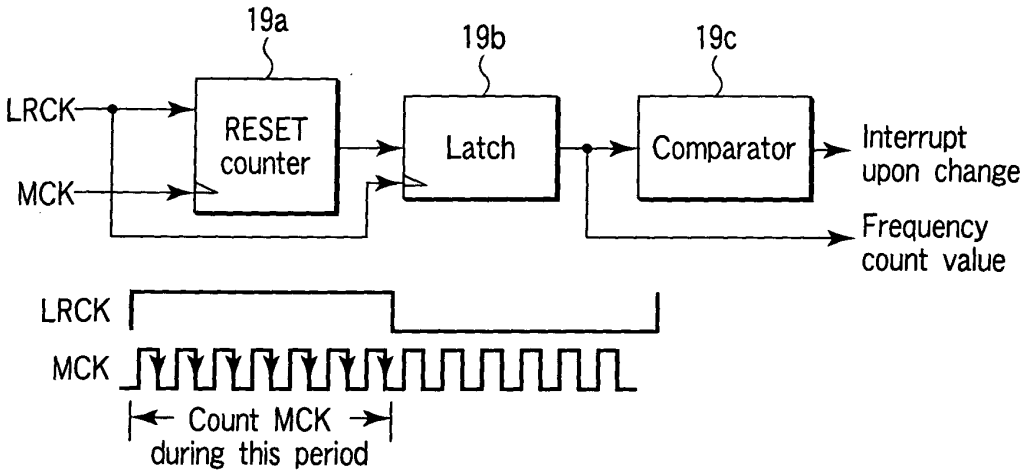

FIG. 9

Compression mode	Sampling frequency	Sampling bitwidth	AUDIO DATA

FIG. 10

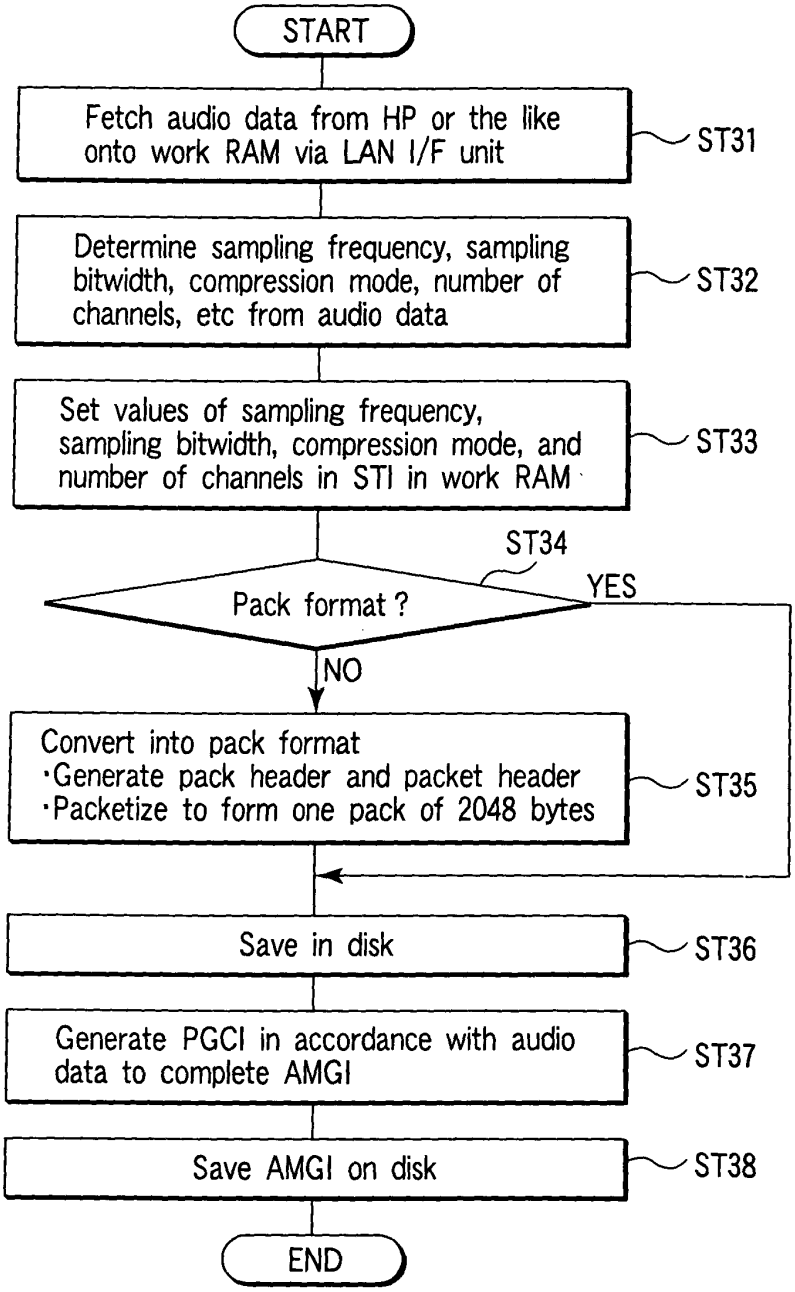
START
Fetch audio data from HP or the like onto work RAM via LAN I/F unit
ST31
Determine sampling frequency, sampling bitwidth, compression mode, number of channels, etc from audio data
ST32
Set values of sampling frequency, sampling bitwidth, compression mode, and number of channels in STI in work RAM
ST33
ST34
Pack format ?
YES
NO
Convert into pack format
·Generate pack header and packet header
·Packetize to form one pack of 2048 bytes
ST35
Save in disk
ST36
Generate PGCI in accordance with audio data to complete AMGI
ST37
Save AMGI on disk
ST38
END

FIG. 11